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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,118	07/22/2003	Volker Harle	1998P1821US2 N	9403
26181	7590	02/24/2004	EXAMINER	
FISH & RICHARDSON P.C. 3300 DAIN RAUSCHER PLAZA MINNEAPOLIS, MN 55402			OWENS, BETH E	
			ART UNIT	PAPER NUMBER

2824

DATE MAILED: 02/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,118

Applicant(s) ^{NO}

HAERLE

Examiner

Beth E. Owens

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-42 is/are allowed.
- 6) ☒ Claim(s) 19-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/722,461.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07232003,08252003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Acknowledgment

1. Claims 1-18 were cancelled by Preliminary Amendment on 22 July 2003.

Drawings

2. The informal drawings submitted 22 July 2003 are objected to because:

Figure 1a: Layer 3 appears to have another thin layer near the top surface.

Figure 2c: There is a German title which needs to be converted to English (Ätzgas).

Figs. 3a-3c and 4a-4c need some form of stippling/cross-hatching/color to easily differentiate the various layers.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because:

Line 1: please delete "The present invention relates to" and replace the sentence with --A method for the production of semiconductor components which includes applying masking layers and components on epitaxial semiconductor

substrates within the epitaxy reactor without removal of the substrate from the reactor.--

Line 4: At least one of the masking layers *are* HF soluble, this is the claimed invention and therefore must be stated in the Abstract. The phrase “may be” includes the possibility that the masking layers are not soluble in HF.

Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:

Page 1, line 25: please replace “integration’s” with --integrations--.

Page 2, line 30: please replace “A” with --a--.

Page 3, line 9: please replace “induced” with --introduced--.

Page 3, line 9: please replace “N2” with --N₂--.

Page 3, line 9: please replace “induction” with --introduction--.

Page 3, line 12: please replace “oxide” with --fluoride--.

Page 3, line 14: please replace “thermic” with --thermally--.

Page 3, line 16: please replace “thickness” with --thicknesses--.

Page 4, line 23: please replace “induced” with --introduced--.

Page 5, line 1: please insert --corrosive-- before the second use of “gas”.

Page 5, line 16: please replace “induction” with --introduction--.

Appropriate correction is required.

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following titles are suggested: --Method of Producing Semiconductors in the Same Epitaxial Reactor by Using HF-Soluble Masks.-- or --Selective Patterning in Continual Epitaxial Semiconductor Manufacturing via HF etching.--

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Koji (JP 2046407, supplied by Applicant.)

applying at least one first semiconductor component on an epitaxial substrate;

Abstract, lines 5-6: a ZnS layer functioning as a lower clad layer is formed by an epitaxial growth by an MOCVD method on a GaAs substrate.

layering a hydrogen fluoride soluble mask over said at least one first semiconductor component and said substrate, said mask defining one or more windows to said substrate;

Abstract, lines 7-8: then an SiO₂ mask 5 is deposited by a thermal CVD method. Then the SiO₂ film is patterned and the SiO₂ film at the part of forming a waveguide layer is removed.

and applying at least one other semiconductor component in at least one of said one or more windows.

A ZnSe layer for a waveguide layer and a ZnS layer for a clad layer are formed successively by a selective epitaxial growth using the patterned SiO₂ film.

Allowable Subject Matter

8. Claims 31-42 are allowed.
9. The following is an examiner's statement of reasons for allowance for claims 31-42:

There is no available prior art nor obvious motivation to combine elements of prior art which teaches a method for producing laterally integrated semiconductor components comprising the steps of applying a mask comprising N masking layers on an epitaxial substrate, wherein each of said N masking layers defines one or more windows for later application of at least one other semiconductor component, wherein said mask defines at least one first window to said substrate, and wherein N is a natural number; applying at least one first semiconductor component on said

substrate in said at least one first window, and etching by use of an etchant at least one of said N masking layers to expose at least one other window to said substrate, applying at least one other semiconductor component in said at least one other window; and if necessary, repeating said steps of etching at least one of said N masking layers and applying at least one other semiconductor component until at least one Nth semiconductor component is applied in at least one Nth window.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beth E. Owens, Ph.D. whose telephone number is 571.272.1882.

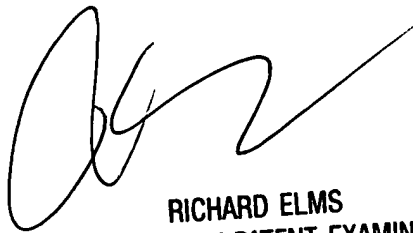
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms, can be reached on 571.272.1869. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306 for official communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571.272.2800.

BEO 02.23.04



RICHARD ELMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800